# DEC STD 012-0 Part Identification Standard

**DOCUMENT IDENTIFIER:** A-DS-EL00012-00-0000 Rev N1, 17-Aug-1990

**ABSTRACT:** This section of DEC STD 012 states the general policy governing the composition and format of part identifiers. It shows how to structure part identifiers and describes all of the fields and their uses.

**APPLICABILITY:** The requirements of this document are mandatory for Digital personnel using, assigning, or writing applications concerning part numbers, part revisions, or part identifiers. NOTE: Any Digital computer application system receiving, passing, storing, displaying, or reporting part identifier (s) or part number (s) must use the Corporate Part Identifier Parser software (see heading 6).

**STATUS:** APPROVED 17-Aug-1990; use VTX SMC for current status.

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APPROVAL: This document has been recommended for approval by the DEC STD 012 General Review Group.

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Use VTX SMC to order copies of this document from Standards and Methods Control. Send distribution questions to JOKUR::SMC or call DTN: 234-4423.

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# 1 INTRODUCTION

## 1.1 PURPOSE

This standard defines the composition and format of part identifiers, part numbers, and part revisions. Part identifiers are groups of numbers and letters used to identify all Digital parts, including systems, options, products, software, services, parts, and publications.

## 1.2 SCOPE

Every part that is designed, manufactured, purchased for sale, distributed, or sold by Digital must have a Digital part identifier. Each part identifier must be listed in the APPIX Master Parts File, except for the intraplant numbers described in *DEC STD 012-5 Unified Numbering Code - Manufacturing Part Numbering Conventions*.

This standard does not apply to identifiers for materials, paints, or finishes described in *DEC STD 020-0 Casting Standard*, *DEC STD 048-0 Metallic Raw Material Selection and Identification*, *DEC STD 092-0 Finish and Color Standard - Introduction and General Requirements*, or *DEC STD 179-0 Requirements for Specifying Raw Material for Powder-Metal Parts*.

## 1.3 RESPONSIBILITIES

All persons using, assigning, or writing applications concerning part identifiers shall conform to the requirements of this standard.

After sign-off of a parts documentation, the responsible engineer, along with Customer Services and Manufacturing representatives, shall determine how that a part identifier changes due to an ECO.

### 1.3.1 Advisory Committee and Ownership

There is an Advisory Committee for this section of DEC STD 012. For a list of members, contact Standards and Methods Control, JOKUR::SMC.

Dick Best is the Domain Manager of the Digital Unified Numbering System, and is responsible for all sections of DEC STD 012. While the owner may delegate ownership authority for these sections, he is ultimately responsible for the content of these standards.

### 1.3.2 Waivers

Requests for waivers to this standard must follow the process described in *DEC STD 066-2 Waivers to Digital Design Standards*.

### 1.3.3 EDP Systems Conformance

Refer to *DEC STD 065-0 Digital Standard Data Definitions* for compliance and schedule requirements.

# 2 PART IDENTIFIER

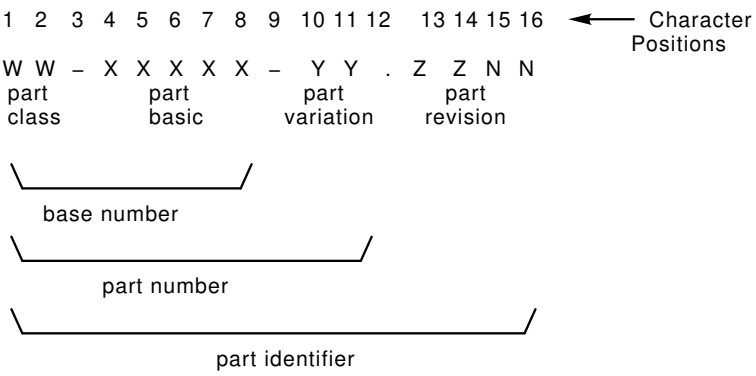
## 2.1 DEFINITION

A part identifier is a specifically formatted string of characters which identifies all parts, products, services, or literature that must be controlled within Digital Equipment Corporation and its subsidiaries.

**NOTE**

**The part identifier examples contained in this standard are shown in the format for transmission of part identifiers, unless otherwise noted. For more information about data format requirements, refer to heading 5.**

## 2.2 FORMAT


1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
Character Positions
W W – X X X X X – Y Y . Z Z N N
part class
part basic
part variation
part revision
base number
part number
part identifier

### 2.2.1 Base Number

The base number of a part is made up of eight characters, including the dash. This includes the two-character part class and the five-character part basic, separated by a dash.

### 2.2.2 Part Number

The part number is made up of 11 characters, including the dashes. This includes the eight-character base number and the two-character part variation, separated by a dash.

### 2.2.3 Part Identifier

The part identifier has 16 characters, including delimiters. This includes the eleven-character part number and the four-character part revision, separated by a period (.).

# 3 FIELD DESCRIPTIONS AND USES

This section describes the formal rules for part numbers and part identifiers. These rules apply when part numbers and part revisions are created.

**NOTE**

**"Letters" are upper case A to Z only. For example, umlauts, cedillas, and accents are not allowed.**

### 3.1 PART CLASS

The two-character part class groups parts into general categories. *DEC STD 012-2 Unified Numbering Code for Part Identifier Class Codes* lists all valid part classes, the responsible person for each part class, and the person(s) responsible for assigning part numbers within each part class. Part classes shall contain only certain allowable character combinations. The part class field shall contain exactly two characters or two spaces.

| Allowed | | Not Allowed | |
|---|---|---|---|
| – | (space, space) | 00– | (zero, zero) |
| AB– | (letter, letter) | 03– | (first character a zero) |
| 70– | (digit, digit) | R– | (first character a space) |
| L3– | (letter, digit) | 5 – | (second character a space) |
| 2H– | (digit, letter) | 4&– | (any character other than a letter or digit) |

Certain combinations of characters will NEVER be assigned as part classes. These are listed in Table 1.

**Table 1: Unauthorized Part Classes**

| |
|---|
| 00 - 09 |
| 0A - 0Z |
| 1A - 1Z |
| I0 - I9 |
| IA - IZ |
| O0 - O9 |
| OA - OZ |

The rules governing the display formatting of the part class are found in subhead 5 of this document. For further information about the standards for printing the part class on a bar code label, see *DEC STD 047-1 Physical Requirements for Bar Coding*. For further information on the representation of the part class on product packaging, product labeling, or product paperwork, see the appropriate section of DEC STD 178.

### 3.2 PART BASIC

The part basic is made up of digits, letters, or both digits and letters. Parts that have the same part class and part basic, but different part variations, usually form a group of related parts. Parts that have different part classes and have the same part basic are not generally related; DEC STD 012-2 discusses where they may be related.

In addition to digits and letters, the part basic may contain trailing spaces or a single slash (/), if the slash is preceded and followed by a digit or a letter. In the part basic, there are occasional uses of the string, "I &", which is valid only in the order flow and fulfillment process. Other characters (lower case letters, colons, dashes, plus signs, and so on) are not allowed.

**NOTE**

**It is recommended that the letters "T" and "O" should should not be used when adjacent to "0" or "1".**

### 3.2.1 Part Basic Justification Rules

The part basic consists of five or fewer characters. If there are fewer than five, then the characters must be justified within the 5-position field.

The justification of the part basic depends on the part class. Table 2 defines the justification rule for each part class. The three rules are as follows.

| | |
|---|---|
| **RIGHT:** | Characters are right justified with leading zeros to fill the 5-character field. Trailing spaces are not allowed. |
| **LEFT:** | Characters are left justified (leading zeros deleted) with trailing spaces added to fill the 5-character field. |
| **SPECIAL:** | (1) If none of the characters are letters, the part basic follows the RIGHT rule.<br>(2) If any of the characters are letters, the part basic follows the LEFT rule. |

The applicable rule for each class is listed in the following table, under "BASIC RULE". The column "VARIATION -00 EXCEPTION?" is explained in subhead 3.3. The "PLANT SPECIFIC?" column refers to whether or not parts may be transferred out of a plant as explained in *DEC STD 012-5 Unified Numbering Code (UNC)- Manufacturing Control Part Numbering Conventions*.

## Table 2: Part Basic Justification Rules

| Part Class | Basic Rule | Variation -00 Exception? | Plant Specific? |
|---|---|---|---|
| <SPACE><SPACE> | Left | No | No |
| 01 - 09 | Illegal* | | |
| 10 - 19 | Right | Yes | No |
| 1A - 1Z | Illegal* | | |
| 20 - 29 | Right | Yes | No |
| 2A - 2Z | Special | Yes | No |
| 30 - 39 | Right | Yes | No |
| 3A - 3Z | Left | No | No |
| 40 - 49 | Right | Yes | No |
| 4A - 4X | Left | No | No |
| 4Y - 4Z | Right | Yes | No |
| 50 - 53 | Right | Yes | No |
| 54 | Special | Yes | No |
| 55 - 56 | Right | Yes | No |
| 57 - 59 | Special | Yes | No |
| 5A - 5Z | Special | No | No |
| 60 - 62 | Right | No | No |
| 63 | Special | Yes | No |
| 64 - 69 | Right | No | No |
| 6A - 6Z | Right | No | No |
| 70 - 77 | Righ | Yes | No |
| 78 - 79 | Special | Yes | No |
| 7A - 7Z | Right | No | No |
| 80 | Left | Yes | No |
| 81 | Right | Yes | No |
| 82 | Left | No | No |
| 83 - 87 | Right | Yes | No |
| 88 | Special | Yes | No |
| 89 | Right | No | No |
| 8A - 8Z | Right | No | No |
| 90 - 99 | Right | Yes | No |
| 9A - 9Z | Right | No | No |
| A0 - A1 | Left | No | No |
| A2 - A9 | Special | Yes | No |
| AA - AZ | Right | No | No |
| B0 - B9 | Left | No | No |
| BA - BZ | Right | No | No |
| C0 - C9 | Left | No | No |
| CA - CZ | Left | No | No |
| D0 - D9 | Left | No | No |
| DA - DZ | Left | No | No |

**Table 2 (Cont.): Part Basic Justification Rules**

| Part Class | Basic Rule | Variation -00 Exception? | Plant Specific? |
|---|---|---|---|
| E0 - E9 | Left | No | No |
| EA - EZ | Special | Yes | No |
| F0 - F4 | Right | No | No |
| F5 | Special | Yes | No |
| F6 | Left | No | No |
| F7 | Special | Yes | No |
| F8 - F9 | Right | No | No |
| FA | Special | Yes | No |
| FB | Left | No | No |
| FC - FE | Special | Yes | No |
| FF - FR | Left | No | No |
| FS | Special | Yes | No |
| FT - FZ | Left | No | No |
| G0 - G9 | Special | Yes | Yes |
| GA - GZ | Special | Yes | Yes |
| H0 - H9 | Special | Yes | Yes |
| HA - HZ | Special | Yes | Yes |
| I0 - I9 | Illegal* | | |
| IA - IZ | Illegal* | | |
| J0 - J9 | Right | No | No |
| JA - JZ | Right | No | No |
| K0 - K9 | Special | Yes | Yes |
| KA - KZ | Special | Yes | Yes |
| L0 - L9 | Special | Yes | Yes |
| LA - LZ | Special | Yes | Yes |
| M0 - M9 | Left | No | No |
| MA - MC | Right | No | No |
| MD | Special | Yes | No |
| ME - MO | Right | No | No |
| MP | Special | Yes | No |
| MQ - MZ | Right | No | No |
| N0 - N9 | Right | No | No |
| NA - NZ | Right | No | No |
| O0 - O9 | Illegal* | | |
| OA - OZ | Illegal* | | |
| P0 - P9 | Special | Yes | Yes |
| PA - PZ | Special | Yes | Yes |
| Q0 - Q9 | Right | No | No |
| QA - QZ | Right | No | No |
| R0 - R9 | Left | No | No |
| RA - RZ | Left | No | No |

**Table 2 (Cont.): Part Basic Justification Rules**

| Part Class | Basic Rule | Variation -00 Exception? | Plant Specific? |
|---|---|---|---|
| S0 - S9 | Left | No | No |
| SA - SZ | Left | No | No |
| T0 - T9 | Special | Yes | Yes |
| TA - TZ | Special | Yes | Yes |
| U0 - U9 | Right | No | No |
| UA - UZ | Left | No | No |
| V0 - V9 | Special | No | No |
| VA - VZ | Special | No | No |
| W0 - W9 | Right | No | No |
| WA - WZ | Special | No | No |
| X0 - X9 | Left | No | No |
| XA - XZ | Left | No | No |
| Y0 - Y9 | Special | Yes | No |
| YA - YZ | Special | Yes | No |
| Z0 - Z9 | Right | No | No |
| ZA - ZZ | Right | No | No |

* See Table 1, Illegal Part Class

For example:

| PART NUMBER | JUSTIFICATION |
|---|---|
| –862 –EA.AB01 | Left |
| 12–00028–02. A01 | Right |
| 20–0M597– . A01 | Right |
| 23–000A2–01. B02 | Right |
| 54–01234–01. A02 | Special |
| 54–M430 –00. A01 | Special |
| 70–04310–01. C05 | Right |
| 80–RH7 –11. A01 | Left |
| B4–8440 –AA. A01 | Left |
| FB–CM11 –FA. A01 | Left |
| QA–001AM–EM. | Right |

### 3.3 PART VARIATION

The two-character part variation is used to indicate that parts are related but different.

Parts may have a part variation consisting of <SPACE><SPACE>, one or two letters, two digits, a letter and a digit, or a digit and a letter. A single letter must be left-justified with a trailing space. A single digit must be right-justified with a leading zero. The variation used is assigned by the group responsible for part number assignment for that part class. Refer to DEC STD 012-2 for more information.

The variation -00 was at one time an assignable variation. For parts that were assigned a variation of -00 at the time when this was legitimate, the variation -00 is still correct.

The variation -00 is now allowed only as an exception, as described below. If a numeric variation is desired for new parts, the first variation is generally -01.

The variation -00 may still be assigned in certain limited circumstances. One such circumstance is when a new number is being created that must correspond directly to an old number, and the old number was already legitimately assigned with a -00 variation. (For example, 78-01234-00 would be assigned to correspond to an existing part number 70-01234-00.) Other categories of exceptions must be documented and filed with the Domain Manager (see subhead 1.3.1).

For certain part classes, the variation -00 has never been allowed. For these part classes, the variation <SPACE><SPACE> has been and is still allowed.

In no case will there be both a -00 and a <SPACE><SPACE> variation of the same part class.

| Allowed | | Not Allowed | |
|---|---|---|---|
| – | (space, space) | – A | (space, letter) |
| –A | (letter, space) | – 2 | (space, digit) |
| –AA | (letter, letter) | –2 | (digit, space) |
| –12 | (digit, digit) | –4& | (any character other than digits, letters, or spaces) |
| –5A | (digit, letter) | | |
| –A5 | (letter, digit) | | |

### 3.3.1 Sequence for Assigning Part Variations

In the absence of a plan for part variations with significance, use the following sequence: 01 to 99, A0 to A9, B0 to B9,...; Z0 to Z9, 0A to 9A, 0B to 9B,...; 0Z to 9Z, AA to AZ, BA to BZ, and so forth. The letters G, I, O, Q and X should not be used, because "G" is confused with "C" and "6", "I" is confused with "1", "O" and "Q" are confused with "0", and "X" may be misinterpreted as a "Wild Card".

If part variations with significance are going to be assigned, then this significance must be defined in a section of this standard, or in another Digital standard, or the plan must be approved by and be on file with the Domain Manager (see subhead 1.3.1). In such plans, the letters I and O must never be used adjacent to the numbers 1 or 0.

## 3.4 PART REVISION

The part revision distinguishes different versions of the same part. It is the last element of the part identifier, and it always consists of four characters. A period (.) is used to separate the part revision and the part number.

The part revision contains two elements: The alpha part revision (first two characters) and the numeric part revision (last two characters). The complete part revision must contain both a valid alpha portion and a valid numeric portion.

A part revision must be assigned to a part prior to the exit of Phase 2 of the product life-cycle as defined in chapter 4 of EL-CP356-00, *Corporate Phase Review Process Guide*. Note that before exit of Phase 2, part revisions may be used.

The first part revision that is assigned to a part is " A01". Thereafter, the part revision is incremented in accordance with the rules in subhead 4.3 of this standard.

### 3.4.1 Part Revision ALPHA

For part revisions, the letters G, I, O, Q, and X shall NEVER be used (except "I", which may be used in "IN" for inactive parts). The character "X" shall NEVER be used in the part revision for products in the development process or for prototypes.

| Allowable | | Not Allowed | |
|---|---|---|---|
| . A | (space, letter) | .A | (letter, space) |
| .AA | (letter, letter) | .03 | (digit, digit) |
| . | (space, space) when no revision has been indicated | .1A | (digit, letter) |
| | | .A1 | (letter, digit) |
| | | .A& | (any character other than a letter or a space) |
| | | .AX | (letter, illegal character) |

| | |
|---|---|
| .– | Some old parts were assigned a revision of "–", which means that the part has been looked at, is okay, and that the previous revision is unknown. For the next revision, see subhead 4.3.1. |
| .* | A revision of "*" was sometimes used to indicate the revision of its document. |
| .IN | For parts that are formally inactivated. |

### 3.4.2 Part Revision NUMERIC

| Allowable | | Not Allowed | |
|---|---|---|---|
| 00 | (zero, zero) allowed for old parts with an alpha revision only | 1 | (digit, space) |
| | | 2 | (space, digit) |
| | | A2 | (letter, digit) |
| | | 3B | (digit, letter) |
| | | 1& | (any character other than a digit) |
| 03 | (zero, digit) | | |
| 12 | (digit, digit) | | |
| | (space, space) when the revision alpha is spaces, when no numeric is known, or when alpha field contains either "–" or "*". | | |

**NOTE**

**A higher number in the numeric revision field does not necessarily indicate a later or better part.**

### 3.4.3 Revision Justification Rules

If the alpha portion is made up of only one letter, the letter shall be right-justified with a leading space.

For example:

```
+----------------+
|FB-CM11 -FA. A21|
+----------------+
```

If the numeric portion is made up of only one digit, the digit shall be right-justified with a leading zero. For example:

```
+----------------+
|54-16901-01. A01|
+----------------+
```

### 3.4.4 Old Parts

Old parts that have only the alphabetic portion of a revision field shall use spaces and zeros to complete the four-character field as follows:

```
                +----------------+
One letter:     |12-34567-89. B00|
Two letters:    |12-34567-00.BB00|
                +----------------+
```

### 3.4.5 Partial Specification of Revision

When any portion of the revision is omitted, it shall be replaced by spaces to preserve the full 16-character part identifier; this occurs when the complete part revision is not known, not appropriate, or not specified.

If the numeric portion of the revision is not known, not appropriate, or not specified, the numeric revision field is filled with spaces and the alpha portion remains in place. If the entire revision is not known, not appropriate, or not specified, then the whole revision field shall consist of four spaces. Refer to subhead 4.5.

For example

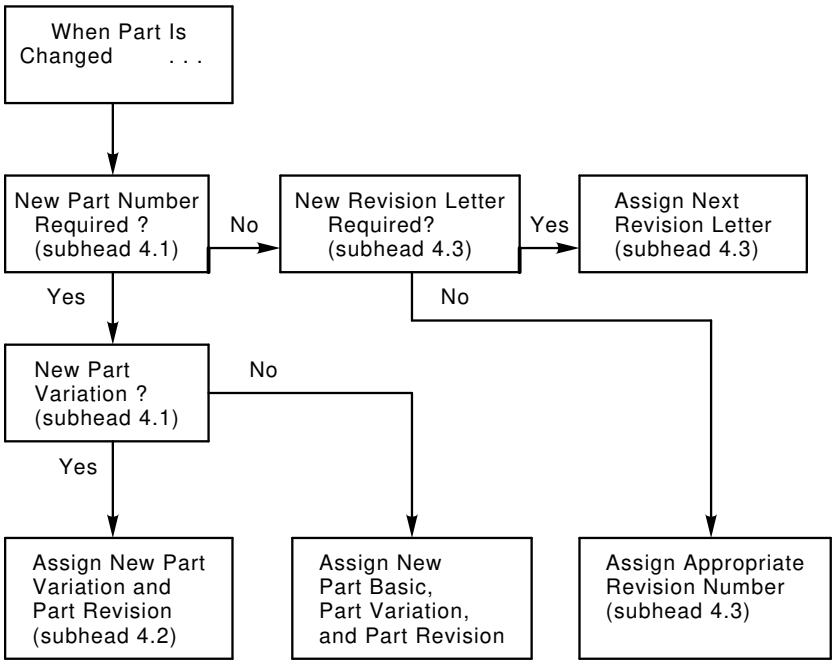
```
+----------------+
|12-76543-12.    |
|  -M4113-  . A  |
+----------------+
```

If the absence of the numeric revision is significant to an application (for instance, as an indication that it refers to all the numeric revisions at this alpha revision level), then this significance must be expressed elsewhere in the context of the application. Similarly, if the absence of the entire revision is significant (for instance, as an indication of any revision to this part), then this must be expressed elsewhere in the context of the application.

## 4 PART IDENTIFIER CHANGES

When a hardware part is changed, either the existing part number stays the same and the revision changes, or a new part number and revision are required. The flow chart in Figure 1 provides guidelines for determining both types of changes. All judgments required in this section (heading 4) are to be made by the project team. Revision changes must be made under a controlled change process. Refer to DEC STD 100 (all sections) for a description of the change process.

**Figure 1: Hardware Part Identifier Determination**


When Part Is Changed . . .
New Part Number Required ? (subhead 4.1)
No
New Revision Letter Required? (subhead 4.3)
Yes
Assign Next Revision Letter (subhead 4.3)
Yes
No
New Part Variation ? (subhead 4.1)
No
Yes
Assign New Part Variation and Part Revision (subhead 4.2)
Assign New Part Basic, Part Variation, and Part Revision
Assign Appropriate Revision Number (subhead 4.3)

## 4.1 PART NUMBER CHANGE DETERMINATION

The decision to change the part number or the part revision shall be made by the project team. Refer to DEC STD 100-0 for a list of members of the product team who must approve ECOs.

Changing any of the first eleven characters of a part identifier constitutes the creation of a new part number. In most cases, the part class will not change because it identifies the broad category to which a part belongs. Changes most often occur in the part basic or part variation, because these two segments of a part identifier identify families of parts and variations within those families.

To indicate that the old part and the new part are closely related, a new variation shall be assigned to the original base number. If however the variation has a predefined meaning and cannot be changed (for example, software), then the part basic shall be changed.

To indicate that the new part is less closely related to the old part, a new part basic shall be assigned.

A new part number (part class, part basic, and/or part variation) should be assigned under any of the following circumstances.

a. When a new part is created.

b. When both the "old" part and the "new" part must remain in production within Digital or one of its vendors.

c. When two or more parts in a configuration must be changed at the same time. This includes changes to microcode.

d. When all the "old" parts must be purged because of safety, liability, or an extreme lack of reliability, and the old parts are being replaced by new parts.

e. When the "new" part will not function in supported (documented) applications of the "old" part.

f. When the physical fit of the "new" part changes, and is not usable in existing supported (documented) applications of the "old" part.

g. When the "new" part is a selected subset of the "old" part and has different applications. For example, the "new" part may be selected by testing or measuring a group of "old" parts for a particular value such as "speed".

h. When the "new" part number is desired to support a marketing strategy (image, price, different features, new regulatory compliance, and so on).

i. When a "new" part meets additional regulatory requirements such as UL, CSA, or IEC, but the old part remains suitable for other applications.

The part number for option-level software products usually does not change from one version of the software to the next, even if the newer version meets one or more of the criteria above. See *DEC STD 012-4 Unified Numbering Code - Software Numbering Conventions*, for the criteria under which new part numbers for option-level software products are created.

### 4.2 IMPACT OF NEW VARIATION ON REVISION

Assignment of a new part variation to an existing part creates a new part and a new part number. Because a new part variation creates a new part number, it shall have a part revision of " A01" assigned. This creates a new part identifier.

```
                                +-----------------+
For example, the part number:   |12-09876-01. C01|
                                |                 |
with a new variation becomes:   |12-09876-02. A01|
                                +-----------------+
```

### 4.3 PART REVISION CHANGES (All Products, Components, and Parts)

When the part is to be changed, but a new part number is not required (that is, none of the conditions in subhead 4.1 apply) a new part revision is required.

Note that the revision of a part always requires revision of a document, but a revision of a document only requires revision of the part when the part is changed.

The following rules must be adhered to when changing the revision field, including the Ripple-Up Rules (see subhead 4.5).

### Number Change Rule (Hardware and Software)

If the new part and the old part are interchangeable in all documented applications, then the numeric revision field shall be changed and alpha revision field shall stay the same.

| | | |
|---|---|---|
| Example:<br>becomes: | 70–14318–01. A01<br>70–14318–01. A02 | (The tolerance on a hole was changed for ease of manufacturing.) |
| Example:<br>becomes: | –T1021– . A01<br>–T1021– . A02 | (The printed circuit board layout was changed to reduce cost.) |
| Example:<br>becomes: | QA–001AA–HM. D01<br>QA–001AA–HM. D02 | (The kit was remastered to make tape copying easier.) |

See the following Letter/Number Change Rule (Hardware) for other conditions where the number is changed.

### Letter/Number Change Rule (Hardware)

If the new part will replace the old part in every documented application, but the old part will not replace the new part in every documented application, then the alpha revision field shall be incremented.

When the letter is incremented, there are two methods of handling the numeric. The standard method is to reset the numeric to "01" whenever a new letter is used.

Example of Standard Method:

| | |
|---|---|
| Existing: | 70-14318-01. A03 |
| becomes: | 70-14318-01. B01 |

Alternatively, the part sign-off team may elect to implement "Numeric Control" using the numeric revision. The decision to use this method must be made for the part prior to the exit of Phase 2, and it must be noted in the Top Document of the engineering drawing set that Numeric control is in place for future changes. The decision to implement Numeric Control is based on whether the part is repairable, the repair/upgrade strategy, the life expectancy of the part, and other business concerns as relevant to the part sign-off team.

The Standard Method must always be used for purchased parts.

The Numeric Control method provides a mechanism for linking the appropriate upgrade process or repair instructions with a given revision of a part. The rule is that when a design change necessitates a new letter, use the next unused numeric for new builds. Separate instructions will be required for upgrading the current revisions; those that are to be changed will use the new letter and keep their same numeric. Note that some of the older revisions may not be changed due to the difficulty of upgrading, or the lack or use of those particular revisions.

Examples of Numeric Control Method:

```
                +----------------+
Existing:       |54-02211-01. C02|
Upgrade:        |54-02211-01. D02|
New build:      |54-02211-01. D03|
                +----------------+
```

A full example of the Numeric Control method is explained in subhead 4.4.1.

#### Letter Change Rule (Software)

If the new version of the software supersedes the old version, the alpha revision field shall be incremented.

```
                +----------------+
Example:        |QA-001AB-HM. D02| VMS V5.0 with remastering
becomes:        |QA-001AB-HM. E01| VMS V5.1
followed by:    |QA-001AB-HM. F01| VMS V5.1A
                +----------------+
```

#### Number or Letter Change Does Not Apply

If the new part does not meet the previous rules then the part number must be changed. Refer to subhead 4.1.

### 4.3.1 Assigning Part Revisions to Old Parts

If a part that does not have a part revision is updated, a part revision must be assigned.

To assign a part revision, determine which engineering document, if any, has controlled the revision of the part. Determine the revision of this document prior to the updating.

For modules, the document is the circuit schematic (CS) if a single circuit schematic exists.

For assemblies, the document is the parts list (PL) or, if no separate part lists exists, use the assembly drawing (UA, IA, AD).

For parts (for example, software, manuals, services) that are not defined or controlled by an archived engineering document, the revision of the part shall start at " A01". Earlier versions of the same part may have (apparent) revisions of "-001", "-002", "V4.5", or "V4.5A".

For old parts that had revisions of "–" or "*" the next revision shall be " A01".

### ECO Affects the Document

If the ECO changes ONLY the document(s), then:

1. The revision letter of the controlling document before the ECO and "01" are appended to the part number.
2. The document revision is incremented.

```
                                    +----------------------+
Example 1: Existing top document    |B-DD-M1234-0-0 REV K  |
           Existing cont. document  |K-CS-M1234-0-DBS REV C|
                                    +----------------+-----+
           Part before ECO          |  -M1234-  .    |
                                    +----------------+
                                    +----------------------+
           ECOed top document       |B-DD-M1234-0-0 REV L  |
           ECOed updated document   |K-CS-M1234-0-DBS REV D|
                                    +----------------+-----+
           Part after ECO           |  -M1234-  . C01|
                                    +----------------+
```

### ECO Affects Part and Document

If the ECO affects BOTH the part and the document(s), then:

1. The revision letter of the controlling document is incremented by one letter.
2. The new revision letter on the controlling document and "01" are appended to the part number.

```
                                    +----------------------+
Example 2: Existing top document    |B-DD-M1234-0-0 REV K  |
           Existing cont. document  |K-CS-M1234-0-DBS REV C|
                                    +----------------+-----+
           Part before ECO          |  -M1234-  .    |
                                    +----------------+
                                    +----------------------+
           ECOed top document       |B-DD-M1234-0-0 REV L  |
           ECOed updated document   |K-CS-M1234-0-DBS REV D|
                                    +----------------+-----+
           Part after ECO           |  -M1234-  . D01|
                                    +----------------+
```

## 4.4 EXAMPLES OF REVISION CHANGES

### 4.4.1 Example 1: Standard Method

This example depicts the changes to a 70-class part using the standard method of control where the number is reset to 01 whenever the letter is changed. Below is a revision tree followed by a description of the changes and the rationale for each revision change. The part was initially built and released at revision " A01".

```
+----------------+
|70-12345-01. A01|<-initial build and release
|70-12345-01. B01|<-ECO1 changed hole size
|70-12345-01. B02|<-ECO2 change material
|70-12345-01. C01|<-ECO3 added additional hole
+----------------+
```

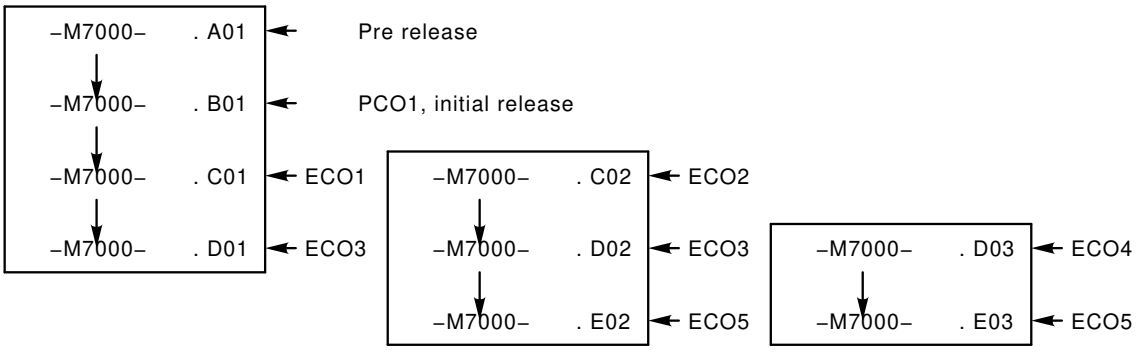
ECO 1 changed the dimension of the holes in the part. The new part works everywhere the old part did (that is, it is backward compatible), but the old part does not work everywhere the new part works. Therefore, the revision changed from " A01" to " B01". The " B01" is, or could be, made from the " A01". For example, manufacturing stopped producing the " A01" and started producing the " B01". However, the " A01" could have been reworked into " B01".

The second ECO changed the material from which the part was made. The parts are totally interchangeable, so the numeric portion of the revision is changed from " B01" to " B02". Manufacturing stopped producing the " B01" and started producing the " B02". The " B01" was consumed in higher level assemblies as the " B02" was phased-in.

ECO 3 adds a hole to the part. Again, the new part works everywhere the old part worked, but the old part does not work everywhere the new part works. The alpha portion of the revision changes and the numeric is reset to "01". The revision changes from " B02" to " C01".

### 4.4.2 Example 2: Numeric Control

The following example depicts a revision change to a module (although the reasoning for this type of change may apply to other parts). A revision tree for this sample module is shown below, followed by an explanation of the type of change and the rationale for the assigned revision.




At its first build (prototype), the M7000 module was assigned a part revision of " A01".

The module was then changed by a Preliminary Change Order (PCO). Because the change superseded the previous design, the letter value was changed. Because the " A01" revision was too expensive to upgrade, it did not require a distinct rework process, and so the number was not changed. Therefore, the revision was changed to " B01".

ECO 1: the M7000 was initially released at revision " B01".

ECO 1 implemented etch cuts and wire adds. Since the ECOed module worked everywhere the old module worked, but the old module did not work everywhere that the new module worked, the letter was incremented. In this case, the rework process from existing " B01" boards was identical to the process for building the new revision (that is, cut the existing etch and add wires), so the number was not changed. The new revision becomes " C01".

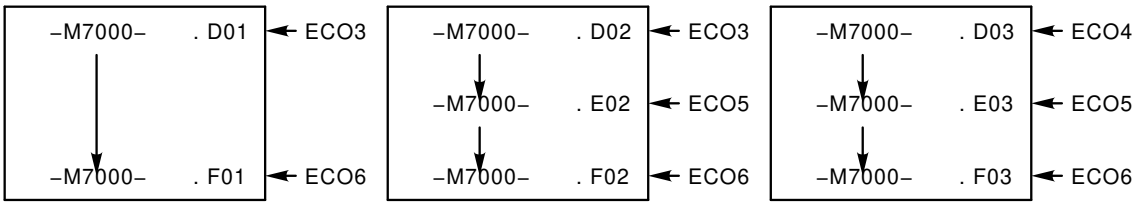
ECO 2 was a relayout that incorporated the previous etch cuts and wire adds, but did not change the functionality. Because the previous revision, with the etch cuts and wire adds, is totally interchangeable with the new revision, a new numeric revision must be assigned. The new revision becomes " C02". Note that the " C02" can never be built by reworking a " C01" because of the relayout of the etch.

ECO 3 repairs a bug that was discovered when the board was used in a new application. So, the letter value must be incremented. But because the newest revision is created by adding a step to the process of building a " C02", a new number is not required and the revision " D02" is used. However, the process for reworking a board from " B01" or " C01" is different; therefore additional rework instructions are prepared and the revision " D01" is created as well for new builds.

ECO 4 was another relayout. Since the module using the new etch board was totally interchangeable with the two reworked modules, the revision was " D03". The " D03" was not reworked from a prior revision.

ECO 5 changed revisions " D02" and " D03" of the M7000 to " E02" and " E03". Notice that the " E02" was reworked from the " D02" and the " E03" was reworked from the " D03". Also note that a revision " E01" was NOT created. If at a later date the " D01" revision is ECOed to be interchangeable with revisions " E02" and " E03", the new revision will become " E01".

At times it is possible to "skip" a particular revision. When a revision is skipped, the part's documentation must clearly indicate the situation. The example below is continued from Example 1. Following that is the explanation and the rationale for the revisions that were assigned.




The original decision was to not create a revision " E01" module. However, that decision was changed when ECO 6 was written. It was decided to incorporate, in one package, the changes which would have been in ECO 5 and the changes in ECO 6. In this case the

revision of the module will change from " D01" to " F01"; there will not be a revision " E01". The revision " F01" is totally interchangeable with revisions " F02" and " F03".

### 4.4.3 Example 3: Software

This example depicts a revision change to a software part. Below is a hypothetical example modeled after actual circumstances.

```
+----------------+
|QA-001AB-HM.    | (release V4.4, old system)
|QA-001AB-HM. A01| (release V4.5, revision system implemented)
|QA-001AB-HM. A02| (release V4.5, remastered)
|QA-001AB-HM. B01| (release V4.5A, special release for Processor X)
|QA-001AB-HM. C01| (release V4.5B, special release for Processor Y)
|QA-001AB-HM. D01| (release V4.5C, special release for dual X)
|QA-001AB-HM. E01| (release V4.6)
|QA-001AB-HM. F01| (release V5.0)
|QA-001AB-HM. F02| (release V5.0, remastered, documents)
|QA-001AB-HM. H01| (release V5.1, "G" not legal)
+----------------+
```

The version number of software is not carried in the Revision Field. If appropriate, the version number can appear in the description.

### 4.4.4 Exceptions

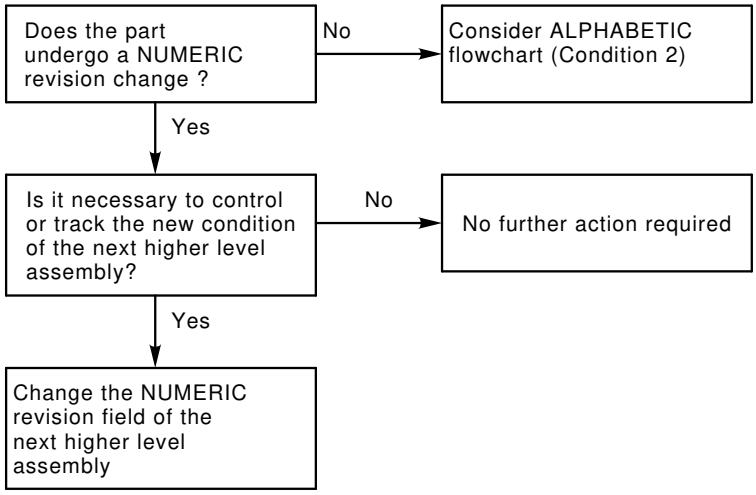
If the rules and examples in subheads 4.3.1 through 4.4.3 do not satisfy your needs contact the Domain Manager with specific details. (See subhead 1.3.1.)

## 4.5 RIPPLE-UP RULES

In many instances, product changes are made to a part (such as a 54-class module) that is a major operational component element of a higher level assembly (such as a 70-class assembly). These higher assemblies are often used as field service spare parts or may be consumed by another plant in the fabrication of even more complex assemblies. It may be required to reflect product changes initiated against the lower level assembly at the higher assembly level for engineering control and revision management purposes. Use the following charts to determine the ripple-up effect.

Under the following conditions, incrementing the part revision of a part will cause the part revision of the next higher assembly to be changed.

### Condition 1 - NUMERIC Revision Change in a Part


Does the part undergo a NUMERIC revision change ?
No
Consider ALPHABETIC flowchart (Condition 2)
Yes
Is it necessary to control or track the new condition of the next higher level assembly?
No
No further action required
Yes
Change the NUMERIC revision field of the next higher level assembly

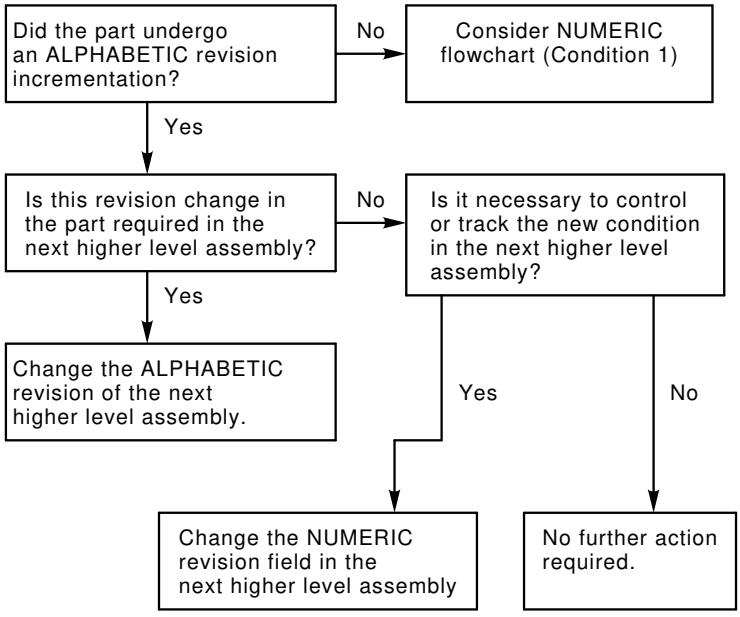
If the revision change of the part is a numeric change (such as " A01" to " A02"), then the revision of the next higher level assembly shall not change, unless it is necessary to control the use of the new part within the next higher level assembly.

Note that the next higher level assembly previously referred to may in turn be a lower level assembly for another higher level assembly; therefore, this decision process should be repeated if the revision of the next higher level assembly above is changed.

**NOTE**

**If a part is used in more than one higher level assembly, its revisions may not need to be tracked in all of them.**

### Condition 2 - ALPHABETIC Revision Change in a Part


Did the part undergo an ALPHABETIC revision incrementation?
No
Consider NUMERIC flowchart (Condition 1)
Yes
Is this revision change in the part required in the next higher level assembly?
No
Is it necessary to control or track the new condition in the next higher level assembly?
Yes
Change the ALPHABETIC revision of the next higher level assembly.
Yes
No
Change the NUMERIC revision field in the next higher level assembly
No further action required.

For hardware, if the revision change of the part is an alphabetic change (for example " D01" to " E01"), and if the new revision of the part is REQUIRED by the next higher level assembly, then the revision of the next higher level assembly must also undergo alphabetic incrementation.

If the new revision part is not required by the higher level assembly, is necessary to control the use of the new part within the next higher level assembly, then the numeric part revision of the next higher level assembly must be incremented.

If the new revision of higher level part is interchanged with older revisions, it is not necessary to control or track the new condition of the next higher level assembly. No further action is required and the next higher level assembly revision stays the same.

Note that the "next higher level assembly" above may in turn be a lower level assembly for its next higher level assembly, and therefore these decision processes should be repeated if the revision of the "next higher assembly" above is changed.

# 5 PART IDENTIFIER FORMATTING

The justification details of the part basic, part variation, and part revision are discussed in subheads 3.2, 3.3, and 3.4.

## 5.1 TRANSMISSION AND INTERCHANGE FORMAT

Part identifiers must be in the transmission format when transmitted or otherwise electronically exchanged among computer systems.

All 16 character positions of the part identifier, including the delimiters, must be transmitted. Any system receiving part identifiers that do not comply with the transmission format may require the sending system to conform to this policy.

**TRANSMISSION FORMAT**

```
  –M700 –    .
 –M7280–AA. A00
  –862   –EA.AB01
    –H7540–B .
10–01610–03. A01
12–10568–11. E01
14–00008–GS.AN01
20–0M597–00. A01
21–00000–GS.–
23–000A2–01. B02
54–01234–01. A12
54–M430 –00. A02
B1–H650 –A . A01
FB–AD8   –A .
```

## 5.2 PRODUCT LABELING

The requirements for product labeling and associated customer documents can be found in the following Digital standards:

*DEC STD 030-0 Module Manufacturing Standard - Introduction and General Requirements*
*DEC STD 047-0 Bar Code Symbology Criteria*
*DEC STD 047-1 Physical Requirements for Bar Coding*
*DEC STD 178 Digital Marking Requirements ( All sections)*

On product packaging, product labeling, product documentation, shipping documentation, and on all other printed formats that are intended to be used by individuals or agencies outside of Digital, the part revision must always be printed as a distinct field separate from the part number.

When part numbers and part revisions are bar-coded, the Unaligned Display Format must be used, as described below. As described in DEC STD 047-0 and DEC STD 047-1, the Code 39 Symbology for bar codes does not permit the use of a leading space in the coded field. Therefore, the part class <SPACE><SPACE> must not be present in the bar coded part number, and the initial space in a part revision must not be present. The Unaligned Display Format provides the rules for such formatting.

## 5.3 DISPLAY FORMATS

There are four accepted formats for displaying part identifiers: the Transmission Format, the Columnar Display Format, the Dense Column Display Format, and the Unaligned Display Format. The Transmission Format is described in subhead 5.1, and the other three display formats are described below.

### 5.3.1 Columnar Display Format

When part numbers or part identifiers are displayed in columns or any other pre-defined field, it is often clearer to omit any delimiters that are next to a field that contains only spaces. If the part class is <SPACE><SPACE>, the first hyphen is omitted. If the variation is <SPACE><SPACE>, the second hyphen is omitted. If the revision is all spaces, the period is omitted.

**COLUMNAR DISPLAY FORMAT EXAMPLES**

```
  H700
  H7280-AA. A00
    862   -EZ.AB01
      H7040-B
      T1001    . A01
10-01610-03. A01
12-10568-11. E01
14-00008-GS.AN01
20-0M597-00. A01
21-00000-GS.-
23-000A2-01. B02
54-01234-01. A12
B1-AD8  -A
```

### 5.3.2 Dense Column Format

For applications where horizontal space is limited, and where a preprinted form is used (such as on Master Order Forms), the part number of a product is added to the preprinted form "solidly," that is, the part class uses two columns, the part basic uses five columns, and the part variation uses two columns. Preprinted vertical lines separate the fields. The hyphens are omitted. The columns formed by the vertical lines are appropriately labeled. This format may be extended to include revisions, if necessary, by adding a four character field.

**DENSE COLUMN FORMAT EXAMPLES:**

Part Number Example

| | | |
|---|---|---|
| 70 | 12345<br>M123<br>TSV05 | 01<br><br>AA |

Part ID. Example

| | | | |
|---|---|---|---|
| 70 | 12345<br>M123<br>TSV05 | 01<br><br>AA | A01<br>B05<br>B02 |

### 5.3.3 Unaligned Display Format

When part numbers, part revisions, or part identifiers stand alone, it is often clearer to omit any dangling delimiters and unnecessary spaces. The rules for removing delimiters are the same as with the Columnar Display Format: once these delimiters are removed, the remaining characters may be left-justified before being displayed.

**UNALIGNED DISPLAY FORMAT EXAMPLES:**

| Part ID. |
|---|
| M700 |
| M7280–AA.A00 |
| 862–EA.AB01 |
| H7540–B |
| T1001.A01 |
| 10–01610–03.A01 |
| 12–10568–11.E01 |
| 14–00008–GS.AN01 |
| 20–0M597–00.A01 |
| 21–00000–GS.– |
| 23–000A2–01.B02 |
| 54–01234–01.A12 |
| 54–M430–00.A02 |
| B1–H650–A.A01 |
| FB–AD8–A |

| Part Number | Rev |
|---|---|
| M700 | |
| M7280–AA | A00 |
| 862–EA | AB01 |
| H7540–B | |
| T1001 | A01 |
| 10–01610–03 | A01 |
| 12–10458–11 | E01 |
| 14–00008–GS | AN01 |
| 20–0M597–00 | A01 |
| 21–00000–GS | – |
| 23–000A2–01 | B02 |
| 54–01234–01 | A12 |
| 54–M430–00 | A02 |
| B1–H650–A | A01 |
| FB–AD8–A | |

## 5.4 PART NUMBERS IN FREE TEXT

When part numbers occur in free text, spaces are not embedded in the part number. The format is the part class, separated by a hyphen from the part basic, and separated by a hyphen from the part variation.
If the part class is <SPACE><SPACE>, it AND the following hyphen are omitted. If the part variation is <SPACE><SPACE>, it AND the preceding hyphen are omitted. If the part revision is not used, it AND the period are omitted. If there is a revision, any leading space in the ALPHABETIC field is omitted.

Examples:

an M7800 module
the 70-12345-67.BA04 assembly
the KA80-A processor
an L0653.A02 module

When part numbers or part identifiers occur in free text, but all readers are not likely to be familiar with DEC part identifiers, the format is as above with the period replaced by the string, "<SPACE> Rev <SPACE>".

Examples:

the 70-12345-67 Rev BA04
an L0653 Rev A02 module
the CI780-M REV B adapter
an M7800 module

If the general public or the managers of systems that use DEC products need to be aware of a revision, the previous format is used with "Rev" replaced by "revision".

Examples:

the 70-12345-67 assembly at revision BA04
an L0653 module at revision A02
the CI780-M adapter at revision B or later

### 5.5 STORAGE FORMAT

It is desirable (but not required) that the storage format of part identifiers follows the format for transmission and interchange.

All 16 character positions of the part identifier, including the delimiters, should be stored. Elements of the part identifier may be accessed separately as long as the relationship of the individual elements to part identifier are clearly defined.

Any system that does not use the Transmission Format for storage must use the Parser software for converting this data to the Transmission or Display Format. The Parser is described in heading 6. This ensures part numbers will be represented in only one way.

For example, in some systems the part revision is stored separately from the part number. In this case, the part number would be stored in 11 character positions (including dashes), and the revision in 4 character positions. Questions about this may be directed to Dick Best, the Domain Manager (see subhead 1.3.1).

## 6 CORPORATE PART IDENTIFIER PARSER SOFTWARE AND ENTRY FORMATS

Any Digital computer application system receiving, transmitting, displaying, or reporting part identifier(s) must use the Corporate Part Identifier Parser software. The Parser software will accept part identifiers and part numbers, both interactively and in batch, align them properly, and ensure that hyphens and the period are located in accordance with the formatting conventions specified in this Digital standard.

The function of the Parser is to establish a correctly formatted part identifier. It does not validate the part identifier against the rules of any other section of DEC STD 012. For example, it does not check that a 78-class number is either allied with an existing 70-class number in accordance with DEC STD 012-5, or that a QA-class number contains valid coding in accordance with DEC STD 012-4, or that the part class is an assigned class in accordance with DEC STD 12-2.

To obtain a copy of the Corporate Part Identifier Parser software, contact Dave Crowley (MILPND::CROWLEY) in the Chief Engineer's Office.

### 6.1 PARSER INPUT FORMATS

Without the Parser software, part numbers would have to be entered into data bases and applications in the Storage Format as it is used at that location. By using the Parser, however, a broad range of input formats can be correctly handled.

The input field that an application supplies to the Parser can be of any length up to 30 characters. For example, the input could be supplied as a 9-character field or as a 16-character field. All transmission output fields are 16 characters in length.

## 6.2 PARSER OUTPUT FORMATS

The Parser produces three output formats: the Transmission Format (see subhead 5.1), the Columnar Display Format (see subhead 5.3.1), and the Unaligned Display Format (see subhead 5.3.3).

### PARSER OUTPUT EXAMPLE

| | |
|---|---|
| Input String: | KA62B–AA.A1 |
| Transmission Format: | –KA62B–AA. A01 |
| Columnar Display Format: | KA62B–AA. A01 |
| Unaligned Display Format: | KA62B–AA.A01 |

The realignment of input, including justification and the handling of filler characters, is done in accordance with Table 2 of this standard. Any reformatting, repositioning, removal, or insertion of characters that results in a correctly formatted part identifier is noted with an "informational" message. Any time the Parser is unable to produce a correctly formatted part identifier, an "Error" message is produced.

| POSSIBLE PARSER INPUT | TRANSMISSION FORMAT OUTPUT |
|---|---|
| 861–A | –861 –A . |
| 00861–A | –861 –A . |
| 00–861–A | –861 –A . |
| 23–A2–1.B2 | 23–000A2–01. B02 |
| 54–1234–1.A12 | 54–01234–01. A12 |
| 54–M430.A2 | 54–M430 –00. A02 |
| 70–12345.B01 | 70–12345– . B01 |
| 7012345–02 | 70–12345–02. |
| 7012345.B | 70–12345.00. B |
| 701234502A1 | 70–12345–02. A01 |
| 12–10568–11.E1 | 12–10568–11. E01 |
| 14–8–GS.AN | 14–00008–GS.AN00 |
| 20–M597.A1 | 20–0M597–00. A01 |
| 21–0–GS.– | 21–00000–GS.– |
| B1–H650–A.A1 | B1–H650 –A . A01 |
| FB–AD8–A | FB–AD8 –A . |
| VT320AS | –VT320–AS. |

A 9-character string will be accepted if the first 2 characters are a valid part class, such as 700123405 = 70-01234-05. This string could have been entered as 70-1234-5 with the same result.

## 7 SORTED LISTS OF PART NUMBERS AND PART IDENTIFIERS

Part numbers and part identifiers, when sorted as in price lists, shall be sorted as if they were in transmission format using an ASCII sort (see subhead 5.3). That is, the collating sequence for part identifiers is space, ampersand (&), hyphen or minus sign (-), slash (/), zero through nine (0...9), period (.), and A through Z. After being sorted, they may be displayed in any format suitable for the application. Refer to heading 5 for possible formats.

# APPENDIX A REFERENCED DOCUMENTS

## A.1 EL-Class Digital Documents

| EL-Class Number | Document Title |
|---|---|
| EL-00012-02 | *DEC STD 012-2 Unified Numbering Code for Part Identifier Class Codes* |
| EL-00012-04 | *DEC STD 012-4 Unified Numbering Code (UNC) - Software Numbering Conventions* |
| EL-00012-05 | *DEC STD 012-5 Unified Numbering Code (UNC) - Manufacturing Control Part Numbering Conventions* |
| EL-00020-00 | *DEC STD 020-0 Cast Metal Parts* |
| EL-00024-00 | *DEC STD 024-0 Top Document Requirements* |
| EL-00030-00 | *DEC STD 030-0 Module Manufacturing Standard - Introduction and General Information* |
| EL-00047-00 | *DEC STD 047-0 Bar Code Symbology* |
| EL-00047-01 | *DEC STD 047-1 Bar Code: Product and Shipping Carton/Container Labelling* |
| EL-00048-00 | *DEC STD 048-0 Metallic Raw Material Selection and Identification* |
| EL-00065-00 | *DEC STD 065-0 Digital Standard Data Definitions - Policy and Requirements* |
| EL-00066-02 | *DEC STD 066-2 Waivers to Digital Design Standards* |
| EL-00092-00 | *DEC STD 092-0 Finish and Color Standard - Introduction and General Requirements* |
| EL-00100-00 | *DEC STD 100-0 Policy and Requirements for the Product Change Process* |
| EL-00178-01 | *DEC STD 178-1 Digital Marking Requirements for Piece Parts* |
| EL-00178-02 | *DEC STD 178-2 Digital Marking Requirements for Subassemblies: Field Replaceable Units (FRU) and Non-Field Replaceable Units* |
| EL-00178-03 | *DEC STD 178-3 Digital Marking Requirements for Completed Products Intended to Be Sold* |
| EL-00179-00 | *DEC STD 179-0 Requirements for Specifying Raw Materials for Powder-Metal Parts* |
| EL-CP356-00 | *Corporate Phase Review Process Guide* |

Use VTX SMC to order copies of EL-class documents from Standards and Methods Control. Send distribution questions to JOKUR::SMC or call DTN: 234-4423.

# APPENDIX B RELATED DOCUMENTS

## B.1 EL-Class Digital Documents

| EL-Class Number | Document Title |
|---|---|
| EL-00012-01 | *DEC STD 012-1 Documentation Identification Conventions Including Mnemonic Codes* |
| EL-00012-03 | *DEC STD 012-3 Packaged System Identification Standard* |
| EL-00012-06 | *DEC STD 012-6 Computer Special Systems (CSS) Numbering Conventions* |
| EL-00012-07 | *DEC STD 012-7 Unified Numbering Code - 74 Class Part Numbering Conventions and Assignment Procedures* |
| EL-00012-08 | *DEC STD 012-8 Field Service Part Identifier Conventions and Assignment Procedures* |
| EL-00012-09 | *DEC STD 012-9 Unified Numbering Code - 94-Class Tool Numbering Conventions and Assignment Procedures* |
| EL-00012-10 | *DEC STD 012-10 Conventions Used to Assign Part Identifiers with Significance in Part Classes 11, 15, 19, 21, and 91* |
| EL-00012-11 | *DEC STD 012-11 Unified Numbering Code for Vendor Equipment Services (VES)* |

Use VTX SMC to order copies of EL-class documents from Standards and Methods Control. Send distribution questions to JOKUR::SMC or call DTN: 234-4423.

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